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# ORAL PRESENTATIONS



**OS1 - Nutrition for sustainability in broiler, layer and turkey production**

Thursday June 22, h. 11.20 - 11.30

**OS1-1 - Feeding male broilers without the use of an inorganic phosphorus source is possible**  
S. Leleu, A. De Grande, E. Delezie, B. Ampe, D. Feuerstein

Thursday June 22, h. 11.30 - 11.40

**OS1-2 - Towards a better prediction of phosphorus digestibility in broilers**  
A. Narcy, V. Khaksar, A. Preynat, M. Jlali, M. Létourneau Montminy

Thursday June 22, h. 11.40 - 11.50

**OS1-3 - Effect of substituting peptide-bound with free amino acids in broiler feeding on acid-base balance depends on asparagine and glutamine supply**  
A. Ibrahim, M. Rodehutsord, W. Siegert

Thursday June 22, h. 11.50 - 12.00

**OS1-4 - Effect of pellet diameter and length on performance and particle preference of broilers fed diets based on coarsely ground wheat and maize**  
M. Neteland, B. Svihus, C. Gundersen Storkås, S.E. Ording Reierstad

Thursday June 22, h. 12.00 - 12.10

**OS1-5 - Comparison of in vitro bioaccessibility and in vivo bioavailability of carotenoids in hens**  
D. Zurač, V. Gunjević, Z. Svečnjak, M. Duvnjak, G. Kiš, D. Bedeković, Z. Janječić, V. Pirgozliev, Z. Kralik, D. Grbeša, K. Kljak**OS2 - Nutritional intervention for climate changes**

Thursday June 22, h. 16.20 - 16.30

**OS2-1 - Effect of n-acetyl-l-cysteine in drinking water of heat stressed finisher broilers on performance and redox status**  
H. Pertiwi, H. Zhang, M. Majdeddin, J. Degroote, J. Michiels

Thursday June 22, h. 16.30 - 16.40

**OS2-2 - The effect of reducing dietary crude protein and energy as well as the amino acid origin on the reduction of global warming potential of broilers using the latest carbon footprint public databases**  
E. Gonzalo, W. Lambert

Thursday June 22, h. 16.40 - 16.50

**OS2-3 - Effects of different arginine to lysine ratios on growth performance, metabolism, and intestinal microbiome of broiler chickens exposed to cyclic heat stress**  
G. Brugaletta, L. Laghi, A. De Cesare, M. Zampiga, C. Oliveri, V. Indio, R. Piscitelli, M. Petracci, F. Sirri

Thursday June 22, h. 16.50 - 17.00

**OS2-4 - Using a proprietary broiler growth model to optimize the body weight (BW) or feed conversion ratio (FCR) of broilers reared under thermoneutral or heat stress condition**  
N. T. Ferreira, W. D. Mansilla, R. Koedijk, A.I. García-Ruiz

Thursday June 22, h. 17.00 - 17.10

**OS2-5 - Formulation of eco-friendly feeds for conventional and organic poultry to reduce feed-food competition, greenhouse gas emissions, and land use**  
B. Méda, L. Jesus, P. Denoual, F. Garcia-Launay

**OS3 - Nutrition and microbiome under challenging conditions**

Friday June 23, h. 11.20 - 11.30

**OS3-1 - Culture of avian caecum organoids to study the effect of functional amino acids and polyphenols supplementation**

J. De Oliveira, T. Pezier, T. Chalvon-Demersay, S. Fontaine, W. Lambert, S. Tesseraud, F. Bussière

Friday June 23, h. 11.30 - 11.40

**OS3-2 - Effect of dietary treatments on performance, oocysts shedding and lesion scores in broiler chickens challenged with Eimeria infection**

R.R. Santos, L. Star, F.F.C. Velkers, J.C.M. Vernooij, J. Heerkens, J. van Harn, I.C. de Jong

Friday June 23, h. 11.40 - 11.50

**OS3-3 - Effects of commercial processing conditions of extruded soybean on ileal and cecal microbiota of broiler chickens**

A.M. Villegas, N. Yacoubi, M. Klunenmann, A. Menconi, T. Applegate

Friday June 23, h. 11.50 - 12.00

**OS3-4 - Systematic review on microbiome-related interventions to enhance broiler productivity and safety of poultry meat**

Y. Mekonnen, V. Indio, F. Savini, F. Giacometti, A. Serraino, M. Candela, G. Manfreda, A. De Cesare

Friday June 23, h. 12.00 - 12.10

**OS3-5 - Ex vivo assessment of the direct and indirect antimicrobial capacities of glycerides of lauric acid using gastrointestinal fluids**

N. Vieco-Saiz, V. Michel, A. Mellouk, O. Lemâle, T. Goossens, J. Consuegra

**OS4 - Solution to improve the nutritional value of feed**

Friday June 23, h. 16.20 - 16.30

**OS4-1 - The net energy system predicts more accurately broiler feed energy than the metabolisable energy system regardless of the crude protein content**

S. Musigwa, P. Cozannet, C.A. Asiamah, S. Wu

Friday June 23, h. 16.30 - 16.40

**OS4-2 - Effects of limestone source and increasing levels of a novel 6-phytase on growth performance of conventional and slow growing broiler breeds**

V. Lagos, C. Walk, C. Kwakernaak, L. Levrouw, A. Smith

Friday June 23, h. 16.40 - 16.50

**OS4-3 - Effects of maize moisture at harvest and drying temperature on starch content and particle size of corn ground in a roller mill**

J. Cabanas-Ojeda, N. Mejia-Abaunza, P.A. Lozano-Cruz, M. Ali, G.A. Gomes, E.O. Oviedo-Rondón

Friday June 23, h. 16.50 - 17.00

**OS4-4 - Improvement of protein digestibility by changing digesta passage kinetics in broilers**

A. Jansman, A. Mens, E. Willems, M. van Krimpen

Friday June 23, h. 17.00 - 17.10

**OS4-5 - Prediction of feeds net energy for broilers**

T.Z. Aye Cho, M. Wongphatcharachai, P. Srichana, P. Geraert, J. Noblet

## OS5 - Non-soy protein sources

Saturday June 24, h. 11.20 - 11.30

**OS5-1 - The nutritional value of porcine blood proteins: AMEn and apparent total tract digestibility of blood meal, haemoglobin powder and plasma powder in young broilers of different ages**

L. Stokvis, C. van Vuure, R. Davin

Saturday June 24, h. 11.30 - 11.40

**OS5-2 - Determination of nutritional value of seeds from different cultivars of pea, yellow lupine, and faba bean for laying hens**

M. Hejdysz, K. Perz, S. Nowaczewski, S. Kaczmarek

Saturday June 24, h. 11.40 - 11.50

**OS5-3 - Effects of the partial replacement of dietary soybean with insect meal on growth performance, meat quality and ceca metabolome and microbiota composition of female turkeys**

M. Zampiga, F. Soglia, L. Laghi, A. De Cesare, G. Brugaletta, C. Oliveri, V. Indio, M. Petracci, F. Sirri

Saturday June 24, h. 11.50 - 12.00

**OS5-4 - Comparative Assessment of Digestion of Protein-Rich Feed Ingredients in Broiler Diets Using a Dynamic and a Static In Vitro Model of the Avian Foregut**

T. Vingerhoets, J. van den Borne, K. Venema, W. Pellikaan, R. Kwakkel

Saturday June 24, h. 12.00 - 12.10

**OS5-5 - Effect of single cell protein incorporated diets on growth performance, carcass characteristics, serum biochemistry and gut health of broilers based on total and standardised ileal digestible amino acids**

R. Chikkanna, S. Bypanahalli, J. Narasimhappa, R. Doreswamy, N. G S, M. Honnenahalli



## POSTER PRESENTATIONS



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### PS1 - Nutrition for sustainability in broiler, layer and turkey production

**PS1-001 - A microencapsulated feed additive containing organic acids and botanicals has a distinct effect on proliferative and metabolic related signaling in the jejunum and ileum of broiler chickens.**

C. Johnson, R. Arsenault, E. Grilli, A. Piva, C. Swaggerty

**PS1-002 - A multi-enzymatic complex with high doses of phytase improves environmental and economical sustainability of broiler production**

G. Godoy, V. Biselo, J.A. Alencar, A. Toscan, N. Fagundes, G. Vasconcellos, D. Militello, C. Stefanello

**PS1-003 - A novel consensus bacterial 6-phytase variant improves ileal amino acid digestibility independent of dietary phytate content and the age of broilers**

W.H.D.S.P. Macelline, M. Tongyani, Y. Dersjant-Li, A. Bello, L. Marchal, P. Selle, S. Liu

**PS1-004 - A novel protease improves apparent nitrogen retention in excreta and reduces ammonia emission from litters in poultry houses.**

A. Seon, C. Walk, Q. Zhang, J. Zhang, J. Berti Sorbara, M. Umar Faruk

**PS1-005 - A triple-strain probiotic approach in laying hens.**

V. Van Hoeck, R. Rodriguez-Sanchez, A. Abdelqader, N. Smeets, J. Maertens

**PS1-006 - Are digestible calcium values formulated in broiler diets with existing digestible calcium values for individual feed ingredients similar to the digestible calcium values determine in-vivo?**

K. Venter, C.R. Angel, C. Jansen van Rensburg, P.W. Plumstead

**PS1-007 - Bakery by-products in poultry diet: effects on performance, blood parameters and fatty acid profile of meat**

K. Srikanthithasan, A. Giorgino, M. Gariglio, E. Diaz, A. Schiavone, E. Fiorilla, S. BERGAGNA, M. Profiti, C. Forte

**PS1-008 - Can modulating egg weight by dietary amino acids improve the eggshell quality in old laying hens?**

R. Akbari Moghaddam Kakhki, C. Alfonso-Carrillo, A. García-Ruiz

**PS1-009 - Carvacrol diffuses from amnion to yolk where it remains stable in pre-hatch chicks**

M. Meijer, H. van den Brand, S. Niknafs, M. Navarro, A.A. Khaskheli, E. Roura

**PS1-010 - Comparative efficacy of dietary IntelliBond copper, manganese, and zinc with organic minerals on egg production and quality in broiler breeders from 42 to 63 weeks of age**

R. Bakhshalinejad, S. Torrey, M.Z. Fan, A.K. Shoveller, E. Kiarie



**PS1-011 - Comparison of feed and water supplementation of *Saccharomyces cerevisiae* boulardii on gut morphology and microbiota in broilers**

A. Dodovski, S. Bozinovski, T. Ristovski, M. Kjosevski

**PS1-012 - Complete Life-Cycle Assessment of a low dietary crude protein strategy in broiler production system from England**

N. Braconi, D. Castellana, H. Blonk, N. Martin, W. Lambert, J. Le Cour Grandmaison

**PS1-013 - Cosabody and Narasin synergistically improve broiler performance in enteritis challenged birds**

P. Paul, K. Livingston

**PS1-014 - Cosabody cooperatively enhances the effect of ionophores on broiler performance in Coccidiosis control model**

K. Livingston, P. Paul

**PS1-015 - Degradation kinetics of maize tocopherols during storage of grain and complete feeds of differing in commercial hybrids**

K. Kljak, D. Zurak, V. Gunjević, Z. Svečnjak, M. Duvnjak, G. Kiš, D. Grbeša

**PS1-016 - Determining a methionine matrix value for added betaine without and with added choline in broiler diets**

W.D. Mansilla, S. Saraswathy, A.I. García-Ruiz

**PS1-017 - Dietary addition of quercetin or 1,25-dihydroxyvitamin D3 improves eggshell and bone qualities of aged laying hens by regulating calcium transport in uterus and bones**

Y. Fu, M. Schroyen, J. Zhou, H. Zhang, S. Wu, J. Wang, G. Qi

**PS1-018 - Dietary hydrolyzed yeast improved intestinal morphology and immune response of broilers under stress challenge**

Y. Ruangpanit, K. Rassamidatta, A. Phaiboon, N. Chanaksorn, P. Carcano

**PS1-019 - Dietary xylo-oligosaccharides result in decreased abundance of epithelial healing and cell motility proteins indicating improved gut integrity in broiler chickens**

C. Castro, S. Niknafs, G. Gonzalez-Ortiz, X. Tan, M. Bedford, E. Roura

**PS1-020 - Digestibility of standard and low-input diets in chicken commercial hybrids, local breeds, and crossbreds**

M. Birolo, A. Huerta, A. Pascual, F. Bordignon, F. Pirrone, C. Castellini, A. Trocino, G. Xiccato

**PS1-021 - Distribution of intestinal intraepithelial and lamina propria lymphocytes influenced by feed additives and host-related factors of broilers**

Y. Duangnumsaewang, J. Zentek, F. Goodarzi Borojoni

**PS1-022 - Effect of a monoglyceride blend alone and in combination with butyric acid esters on the performance and gut response regarding stress homeostasis in broilers**

P. Konieczka, A. Holthausen, A. Drazbo, E. von Heimendahl, L. Barnard, K. Kozłowski

**PS1-023 - effect of dietary methylsulfonylmethane supplementation during 1-42 day of age on growth performance and carcass characteristics of broilers**

Z. Li, J.C.D.P. Dorigam, B. Gutierrez

**PS1-024 - Effect of dietary Phytase and NSP'ase on performance and egg quality of Lohmann white-classics**

Y. Cufadar, S. Golzar Adabi, L. Nollet, E.T. Gül

**PS1-025 - Effect of Feeding Different Dietary Concentrations of Zinc and Copper on Haematological and Bone Morphometric Parameter of Growing Turkey Chicks (Poults)**

J. Agashe, C. Deo, A. Biswas, S. Bhanja, S. Jadhav, G. Kullori, M. Nampalle

**PS1-026 - Effect of the rearing system on calcium, phosphorus and cholecalciferol vitamin intake, productive performance, egg quality traits and keel bone damage in laying hens.**

D. Chiattelli, R. Piscitelli, F. Sirri, C. Castellini, A. Cartoni Mancinelli

**PS1-027 - Effect of varying levels of amaranth leaf meal on performance, meat, and bone characteristics of Ross 308 broiler chickens**

T.G. Manyelo, N.A. Sebola, J.W. Ng'ambi, M. Mabelebele

**PS1-028 - Effectiveness of starch digestion using different starch sources: Are broiler chickens and pigs different?**

L. Schmidt Bassi, M. Hejdysz, P. Kołodziejcki, A. Smith, J.O. Berti Sorbara, A. Cowieson, S. Kaczmarek, B. Svihus

**PS1-029 - Effects of a commercial triple-strain *Bacillus*-based probiotic on broiler performance and welfare**

A. Meuter, A. Inoue, S. Lerner, I.C.L. Almeida Paz

**PS1-030 - Effects of butyrate or butyric glycerides in combination with different selenium sources as strategies to improve performance of the aged laying hens**

T. Goossens, D. Cardoso, G. Gong, Z. Xiong, B. Mallmann, O. Lemâle, L. Sun

**PS1-031 - Effects of combination of butyrins/valerins and butyrins alone on growth performances and carcass quality of broiler chicken**

T. Poeikhampha, M. Kamphon, L. Li

**PS1-032 - Effects of dietary amino acid supply on amino acid metabolism in broilers**

A. Jansman, J. van der Meulen, P. van Wikselaar, W. Lambert

**PS1-033 - Effects of novel docosahexaenoic acid (DHA) sources on egg production, egg quality and enrichment of eggs and tissues in Lohmann LSL lite hens**

A.N. Maina, E. Lewis, E.G. Kiarie

**PS1-034 - Effects of stepwise matrix application of a novel consensus bacterial 6-phytase variant on growth performance, bone quality, economic and sustainability benefits in broilers**

A. Bello, S. Haldar, A.E. Ghane, A. de Kreijl, Y. Dersjant-Li

**PS1-035 - Effects of varying dietary calcium levels on broiler performance, litter quality, and pododermatitis**

K. Venter, C.R. Angel, P.W. Plumstead

**PS1-036 - Egg production parameters, microbiome modulation and environmental benefits of using a precision biotic in laying hens.**

M. Umar Faruk, P. Segobola, E. Amaya, B. Blokker, M. Segura-Wang, M.I. Lorenzo

**PS1-037 - Evaluating the effects of diet type, diet non-phytate phosphorus level, and storage length on egg quality of white egg laying hens**

A. Pescatore, G. Perrin, M. Jones, D. Gillespie, M. Ford, S. Adedokun

**PS1-038 - Evaluating the link between microbial biomarkers and performance in broiler field trials evaluating gut health additives**

T. Goossens

**PS1-039 - Evaluation of the dietary administration of a thermo-mechanical and enzyme-facilitated processed soybean meal on growth performance and ceca microbiota of broiler chickens**

M. Zampiga, L. Blavi, M. Karimi, F. Sirri

**PS1-040 - Evaluation of the effect of a natural antimicrobial in feed for laying hens on the productive performance and egg quality**

E. Maguregui, D. Díez, A. Tesouro, M. Soriano, C. Gallardo

**PS1-041 - Expression of glucose transporters in the jejunum of free-range chickens fed cupuassu seed meal in the diet**

E.F. Alves da Silva, M.R. Brito dos Santos, A.V. de Sousa, C.J. Bruno de Oliveira, P.E. Naves Givisiez, A.L. de Barros Moreira Filho

**PS1-042 - Feeding low protein diets with reduced soybean meal inclusion in laying hens**

J. van Harn, A. Rezaei Far, J. Phuc, C. Veiga

**PS1-043 - Global warming potential of broiler diets with strongly reduced crude protein, soybean meal and energy levels**

H. Enting, W. Lambert, J. Le Cour Grandmaison, A. Amerah

**PS1-044 - Hydroxy trace minerals with an increased bioavailability as a more sustainable broiler production strategy**

A. De Grande, S. Leleu, E. Delezie, A. Van der Aa, M. Brink, L. Vande Maele

**PS1-045 - Impact of crude protein reduction in broiler feed on sustainability impact factors**

A. Lemme, K. Fenske, H. Westendarp, M. Guhe, E. Rother

**PS1-046 - Impact of dietary phosphorus supply on laying hen performance and on body, bone and eggshell mineral density.**

L. Léonard, F. Hervo, R. Angel, A. Narcy, M. Létourneau Montminy

**PS1-047 - Impact of dietary sodium diformate on broiler performance - a meta-analysis**

C. Lückstädt

**PS1-048 - Impact of different feed vitamin levels on broiler health and performance**

J. Hernandez

**PS1-049 - Impact of graded levels of exogenous xylanase in wheat-soy diet on growth performance, energy utilisation and nutrient digestibility of young broilers**

V. Pirgozliev, S. Mansbridge, I. Whiting, A. Jozwik, K. Kljak, A. Atanasov, S. Rose

**PS1-050 - Impact of low phosphorus levels on broiler chickens' growth performance and bone mineralization at two calcium to phosphorus ratios**

M. Mireaux, F. Richard, C. Hamelin, K. Bebin

**PS1-051 - Impact of trace element source and level on growth performance and phytase efficacy**

H. Philippi, V. Sommerfeld, A. Monteiro, M. Rodehutschord, O.A. Olukosi

**PS1-052 - Impact of Zn source and dietary level on prececal P digestibility, InsP6 disappearance and ileal myo-inositol concentration in broiler chickens**

H. Philippi, V. Sommerfeld, A. Monteiro, O.A. Olukosi, M. Rodehutschord

**PS1-053 - In ovo injection of twenty essential oils: hatchability and organ weights at hatch in broiler chickens**

S. Niknafs, A.A. Khaskheli, M. M Y Meijer, X. Zhou, T. Aumiller, E. Roura

**PS1-054 - In vivo performance and carcass traits of Japanese quail (Coturnix japonica) fed diets supplemented with Hermetia illucens oil**

N.F. Addeo, E. Atallah, S. Vozzo, T.M. Mahayri, F. Bovera, G. Moniello

**PS1-055 - Influence of phytase dosage and dietary phytate concentration on prececal phytate disappearance and amino acid digestibility in broilers**

S. Wolfrum, W. Siegert, V. Sommerfeld, D. Feuerstein, M. Rodehutschord

**PS1-056 - Influence of use of organic minerals in laying hen diets on productive performance, egg quality and bone strength**

Z. Janječić, G. Kiš, M. Janječić, I. Kos, I. Vnućec, D. Bedeković



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[www.innovad-global.com](http://www.innovad-global.com)

**PS1-057 - Interaction of wheat bran particle size and stimbiotic supplementation on growth performance and ceca pH of broilers fed corn-based diets**  
S. Veluri, M.R. Bedford, G. Gonzaleaz-Ortiz, O.A. Olukosi

**PS1-058 - Intestinal health and selenium: effect of selenomethionine on epithelial barrier function in Caco-2 cells.**  
A. Garcia-Vara, J. Campo-Sabariz, R. Ferrer, R. Martim.Venegas

**PS1-059 - Intestine morphology and performance of free-range chickens fed different levels of cupuassu seed meal**  
E.F. Alves da Silva, A.V. de Sousa, D. Silva Santos, M.V. Barbosa Macedo, P. E. Naves Givisiez, C.J. Bruno de Oliveira, A.L. de Barros Moreira Filho

**PS1-060 - Kernel physical properties affect the carotenoid profile of yolks from hens fed diets differing in maize hybrid**  
V. Gunjević, D. Zurak, Z. Svečnjak, M. Duvnjak, G. Kiš, D. Bedeković, Z. Janječić, V. Prirgozliev, D. Grbeša, K. Kljak

**PS1-061 - Lysozyme, essential oils and vitamins' mixture of additive supports respiratory health and improves antibody titres after viral vaccinations in hens**  
I. Giannenas, I. Stylianaki, T. Mantzios, S. Savvidou, S. Dokou, G. Papadopoulos, S. Vasilopoulos, A. Patsias, J. RAJ, J. Bošnjak-Neumüller, M. Vasiljević, M. Pajic, V. Tsiouris

**PS1-062 - Marigold (*Calendula officinalis*) extract supplementation may improve the oxidative status of broilers fed with high level of n-3 or n-6 PUFA**  
V. Rezar, A. Levart, A. Nemeč Svete, J. Salobir

**PS1-063 - Methionine source and level modulate gut pH, amino acid transporters and metabolism related genes in broiler chickens**  
L. Gong, T. Mahmood, Y. Mercier, Y. Guo

**PS1-064 - Methionine to sulfur amino acids ratio is not a limiting factor for broiler performance fed with low protein diets**  
D.I. Batonon-Alavo, T. Mahmood, Y. Mercier

**PS1-065 - Microbial phytase inclusion improves dietary Ca and P digestibility but cannot fully restore the compromised growth performance in broilers fed a Ca-deficient diet**  
Y. Hu, J. van Harn, J. van Baal, W. Hendriks, A. Dijkslag, M. van Krimpen, P. Bikker

**PS1-066 - Modified wheat bran as feed ingredient and its impact on egg quality of laying hens**  
A. Dauksiene, R. Gruzauskas, D. Klupsaite, V. Starkute, V. Lele, P. Zavistanaviciute, E. Mozuriene, E. Zokaityte, E. Bartkiene

**PS1-067 - New feeding strategies for organic egg production with reduced dietary phosphorus**  
S. Steinfeldt, S. Knorr Jensen



**PS1-068 - Nitrogen recycling effect of OH-Methionine: a simple action to reduce nitrogen excretion in broiler chickens**

A. Barbe, D.I. Batonon-Alavo, T. Mahmood, Y. Mercier

**PS1-069 - Novel product with combination of Saccharomyces cerevisiae fermentation product and essential oil compounds improved broiler performance: a metanalysis**

V. A. Kuttappan, Y. Fournis, C. Clemons

**PS1-070 - Nutrient digestibility and digesta mean retention time in laying hens of two different breeds fed with fine vs coarse oat hulls**

M.F. Habibi, R. Kwakkel, S. de Vries

**PS1-071 - On farm report of Pediococcus acidilactici cncm 4622 supplementation in pullets' production with new criteria for the evaluation of pullet's quality**

S. Soler, E. Chevaux, M. Ligabue, A. Sacy

**PS1-072 - Phase dependent reduction of dietary protein levels has no negative impact on performance parameters while low or zero soybean meal (SBM) diets perform better compared to SBM fed broilers**

B. Saremi, L. Vlerick, B. Matton, J. Millemcam

**PS1-073 - Phosphorus and calcium requirements for bone mineralization of growing broilers predicted by mechanistic modelling**

M. Reis, N. Sakomura, I. Bouvarel, R. Angel, A. Narcy, M. Létourneau Montminy

**PS1-074 - Phosphorus requirements and phytase activity in wheat- and maize-based diets for two strains of senior laying hens**

S. Moeyersons, A. De Grande, N. Everaert, E. Delezie

**PS1-075 - Protein-rich circular ingredients can partly replace soybean meal in broiler diets**

J. van Harn, H. Berman, A. Jansman, A. Dijkslag

**PS1-076 - Raw materials non-digestible nitrogen compounds (NDNC) as formulation predictor of nitrogen excretion in broiler chickens**

T. Mahmood, F. Rouffineau, A. Cayzac, Y. Mercier

**PS1-077 - Reduce, recycle and reuse: tomato and pepper from food waste for diets of end-of-lay hens in a sustainable egg production system. Egg quality traits.**

A.R. Di Rosa, G. Pace, F. Accetta, V. Lo Presti, V. Chiofalo

**PS1-078 - Reducing protein content increases metabolizable energy in broilers**

T. de Rauglaudre, B. Méda, S. Fontaine, W. Lambert, S. Fournel, M. Létourneau-Montminy

**PS1-079 - Reduction of protein content and electrolyte balance to reduce nitrogen losses through volatilization in broilers**

T. de Rauglaudre, B. Méda, S. Godbout, W. Lambert, S. Fournel, M. Létourneau-Montminy

**PS1-080 - Relationship of electrolyte balance and dietary calcium and phosphorus content to chicken performance**

M.A. Solano-Garcia, M. Létourneau-Montminy, A. Narcy, D. Venne, A.R. Alfonso-Avila

**PS1-081 - Spicy based additives as alternatives to Vitamin E supplementation as antioxidant in broiler chicken feeds.**

F. Sevillano, M. Blanch, M.A. Ibáñez, D. Menoyo

**PS1-082 - Stretching boundaries on sustainable broiler feeding: Moist brewers' spent grains and European inclusive diets**

E. Frehen-van Calmthout, R. Oppers, C. Jansen, R. Kwakkel

**PS1-083 - Sustainable broiler production: total removal of added inorganic phosphate in commercial diets with or without by-products and containing phytase**

Y. Dersjant-li, A. Bello, J. Firman, L. Marchal

**PS1-084 - The apparent metabolizable energy value of black soldier fly larvae fat used in broiler chicken diets**

B. Kierończyk, M. Rawski, K. Stuper-Szablewska, D. Józefiak

**PS1-085 - The association of different feed additives prevents the negative effects of necrotic enteritis on broilers**

R. Barbalho, M. Bonato, F. Souza, L. Araújo, A. Kiess, C. Castaneda

**PS1-086 - The CEER project - Development of sustainable poultry production based on a circular economy for feeding resources**

P. Khanal, G. Næss, B.M. Dahal, H. Luitel, S. Tiwari, A. Ghimire, U. Tiwari

**PS1-087 - The effect of commercial feed additives aiming at reducing antibiotic usage under commercial field conditions of intensive broiler farming in Greece and Cyprus**

M. Simitopoulou

**PS1-088 - The effect of grinding method and extent of pelleting of broiler diets on performance, feeding behavior, and digestive tract functionality**

S. Dhakal, H. Hetland, B. Svihus

**PS1-089 - The effect of oat hull inclusion level and extent of grinding of main ingredients on the performance and gizzard characteristics of broiler chickens fed oat-based pelleted diets**

K. Itani, S. Ghimire, S. Dhakal, A. Smith, F. Steinhoff, K. Ljøkjel, B. Svihus

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A. Calik, H. Bayir, S. Ozbek, D. Cardoso, P. Sacakli

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K. Lipiński, M. Mazur-Kuśnirek, Z. Antoszkiewicz, J. Kaliniewicz, P. Konieczka

**PS1-092 - The effects of guanidinoacetic acid supplementation in a low AMEn diet on growth performances and mortality of broilers farmed under Indian conditions**

C. Gayrard, M. Klünemann, Y. Patil

**PS1-093 - The effects of sources of manganese, zinc, and copper during the rearing phase on growth performance, tibia traits, egg production and eggshell quality in Lohmann Brown birds**

R. Akbari Moghaddam Kakhki, C. Alfonso-Carrillo, A. García-Ruiz

**PS1-094 - The fate of different concentrations of dietary oat hulls with varying grinding levels in broilers**

S. Ghimire, K. Itani, S. Kazcmarek, A. Smith, B. Svihus

**PS1-095 - The impact of dietary supplementation with an Aspergillus Oryzae-derived postbiotic on productive performance of laying hens under commercial conditions**

C. Ocasio Vega, F. Bargo

**PS1-096 - The influence of dietary cinnamaldehyde in combination with carvacrol or thymol on the mechanical properties of tibia in post-peak laying hens**

H. Zhang, Y. Wang, Y. Wang, L. Wang, X. Li, G. Cui, L. Ji, Y. Huang, J. Michiels, W. Chen

**PS1-097 - The influence of varying inclusion levels of whole grain sorghum on performance and gut morphology of indigenous Boschveld chickens**

G. Mabunda, T.G. Manyelo, N. Sebola, M. Mabelebele

**PS1-098 - The maternal effect of dietary mulberry-leaf flavonoids supplementation on the development of skeletal muscle in broiler offspring**

Z. Lv, Z. Huang

**PS1-099 - The potentiality of using high crude protein sorghums in diets for broiler chickens**

W.H.D.S.P. Macelline, I. Godwin, P. Chrystal, M. Toghyani, D. Cantor, M. Morshed, P. Selle, S. Liu

**PS1-100 - The supplementation of Glycine with a constant methionine-to-sulfur amino acids ratio improves performance of broiler chickens fed with low protein diets**

D.I. Batonon-Alavo, T. Mahmood, Y. Mercier

**PS1-101 - Total Replacement Technology™ (TRT) reduces mineral excretion, while improving eggshell strength and preserving bone health**

J. Estevinho, H. Walker, J. Taylor-Pickard

**PS1-102 - Use of high-lauric oils in broiler starter diets and their influence on growth performance and fatty acid digestibility**

M. Saad, M. Espinosa de los Monteros Peñafiel, G. Verge Mèrida, M. Sadurní, M. Verdú, R. Sala, A.C. Barroeta, L. Castillejos

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W.D. Mansilla, A.I. García-Ruiz

**PS1-104 - Utilising a strain of probiotic Bacillus licheniformis to support high-producing layers**

N. Ceylan, W. Van der Veken, V. Hautekiet

**PS1-105 - Zinc sources provide different effects on performance and on bacteria count in broiler**

A. Corniaux, A. Rigo Monteiro, A. Romeo

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M. Umar-Faruk, F. Cisneros, V. Gigaud

**PS2-002 - Does a curcumin-based feed additive in broiler counteract heat stress consequences?**

M.M. Mustafa, F. Karadas, I.T. Tayeb, J.F. Gabarrou

**PS2-003 - Effect of a precision biotic on the growth performance, welfare indicators, and environmental footprint in broiler chickens**

C. Bortoluzzi, P. Segobola, P. Fidiarakis, L. Tamassia, C. Saviani, J. Sorbara

**PS2-004 - Effect of different energy levels of low protein diets on the nitrogen retention and excretion of broiler chickens**

P. Strifler, N.A. Such, V. Farkas, B. Horváth, K. Duplecz, L. Pál

**PS2-005 - Effect of temperature and feeding time on shell thickness**

O. Blanco, N. Chaora, N. Tyler, M. Ciacciarrello

**PS2-006 - Effects of dietary amino acid density on amino acid digestibility, performance, and breast meat composition in broilers reared under thermoneutral, heat stress, and pair-feeding conditions**

J. Teyssier, P. Cozannet, S. Dridi, S.J. Rochell

**PS2-007 - Effects of dietary supplementation with a plant extract combination in laying hens raised in hot conditions at the peak production phase**

P. Sakkas, M. Panheleux, F. Robert

**PS2-008 - Effects of dietary supplementation with a plant extract combination on broiler performance and stress tolerance under hot ambient conditions**

A.G. Mascarenhas, M.B. Café, A.S. do Carmo, H. Mello, J. Batista, F. Robert, M. Panheleux, P. Sakkas

**PS2-009 - Effects of dietary  $\alpha$ -tocopherol and ascorbic acid on growth performance and breast meat quality parameters in broiler chickens exposed to high ambient temperatures**

M. Pečjak Pal, A. Levart, J. Leskovec, J. Salobir, V. Rezar

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F. Hickmann, I. Andretta, M. Kipper

**PS2-011 - Growth and slaughtering performance of a local chicken breed fed dried and live Black soldier fly larvae as environmental enrichment**

E. Fiorilla, M. Gariglio, V. Bongiorno, E.E. Cappone, V. Zambotto, F. Gai, J. Cortes, C. Coudron, I. Biasato, A. Schiavone

**PS2-012 - Plant-derived isoquinoline alkaloids enhance growth performance, gut integrity, and the gut microbiome in broiler chickens reared in summer of tropical climates area**

S. Khongthong, D. Faroongsarn, N. Roekngam, P. Piewngam, W. Kraitavin, A. Pastor, T. Steiner, Y. Thepparat

**PS2-013 - Supplemental methyl sulphonyl methane improves performance in grower phase and enhances tolerance to heat stress in the finisher phase of male broilers**

H. Zhang, M. Majdeddin, J. Degroote, E. Van Liefferinge, N. Van Noten, C. Van Kerschaver, M. Vandaele, J. Cesar De Paula Dorigam, J. Michiels

**PS2-014 - Supplementation of a lignan-rich feed supplement derived from wood alleviates heat stress in fast-growing broilers**

Z. Idrus, S. Ahmad Hanafi, C. Potthast, A. Riemensperger, S. Hirtenlehner

**PS2-015 - The effects of different feed compositions on reducing the negative effects of heat stress in broilers on performance and meat quality**

R. De Baets, E. Delezie, G. Antonissen, J. Michiels

**PS2-016 - The role of a natural antioxidant as a feed supplement in broilers**

A. De Grande, S. Leleu, E. Delezie, T. Rijsselaere, K. Deschepper

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**PS3-001 - A microencapsulated blend of thymol and organic acids can support broilers during a necrotic enteritis challenge with *Clostridium perfringens***

B. Tugnoli, A. Piva, E. Grilli

**PS3-002 - A microencapsulated thymol-based blend of botanicals can clear *Salmonella* Enteritidis in contrast to common in-feed antibiotics in broilers**

G. Giovagnoni, B. Tugnoli, C. Johnson, A. Piva, R. Arsenault, C. Swaggerty, E. Grilli

**PS3-003 - A qPCR study of APEC and *C. perfringens* virulence gene prevalence in South African Poultry farms**

J. Walker, Q. Wang, L. Mostert, A. Mereu, K. Gibbs, E. White, J. McAuliffe

**PS3-004 - Amino acid digestibility and tissue protein synthesis and degradation in broiler chickens on low protein diets during infection with *Eimeria* spp.**

A.M. Ajao, G. Liu, J. Taylor, T. Applegate, R. Selvaraj, M. Ball, I. Kyriazakis, W.K. Kim, O.A. Olukosi

**PS3-005 - *Bacillus* sp. PB6 improves performance and alters the microbiome of breeding pheasants under commercial conditions in Poland**

K. Vermeulen, P. Bukowska, E. N'Guetta, A. Wealleans

**PS3-006 - Butyric glycerides act directly and indirectly on chicken enterocytes to enhance resistance to pathogen colonization**

A. Mellouk, N. Vieco-Saiz, V. Michel, O. Lemâle, T. Goossens, J. Consuegra

**PS3-007 - Changes in the gut microbial composition of broiler chicks fed non-antibiotic feed additives**

G.F.C. Sales, L.R. do Monte Pessoa Felix, M.R. Brito dos Santos, M. de Mesquita Souza Saraiva, W.J. de Araújo, P.E. Naves Givisiez, C.J. Bruno de Oliveira

**PS3-008 - Dietary supplementation with 3 strains of *Bacillus velezensis* improved performance and gut integrity in commercial broilers in Belgium**

J. Villatoro Hernandez, M. De Gussem, B. de Sloovere, S. van der Klein, K. Gibbs, C. Evans, B. Hillen

**PS3-009 - Double *Lactobacilli* strain-based pro- and post-biotic influenced broiler caecal microbiota mainly under dietary challenging conditions**

S. Jansseune, F. Blanc, W. Hendriks, J. van Baal, A. Lammers, A. Mahieu, M. Aoun, F. Calenge, M. Pinard van der Laan

**PS3-010 - Effect of a precision biotic in broiler chickens fed corn or wheat-based diets**

C. Bortoluzzi, P. Segobola, M. Segura-Wang, C. Iaconis, A. Leduc, R. Aureli, J. Sorbara

**PS3-011 - Effect of a probiotic solution on intestinal health of broiler chickens co-challenged with salmonella and mycotoxins**

D. Preveraud, M. Ingberman, B. Castello Branco Beirão, N. Simarro-Fagundes, T. Goossen, T. Quinteiro-Filho

**PS3-012 - Effect of a stimbiotic and nutrient density in induced dysbacteriosis broiler chickens on performance, gut health, immune and microbiome modulation**

X. Rousseau, G.A. Gomes, N. Ahmad, S. Haldar, A.K. Dhara, S. Sihi Arora, T. Tedeschi dos Santos

**PS3-013 - Effect of a triple-strain *Bacillus*-based probiotic on in vitro inhibition of *Enterococcus cecorum* isolated from broilers**

A. Meuter, D. Sandvang, L. Skjoet-Rasmussen, L. Capern

**PS3-014 - Effect of feeding diet containing coccidiostat and administration of antibiotics to turkeys in the first days after hatching on yolk sac resorption and maternal antibody levels**

J. Jankowski, D. Mikulski, P. Konieczka, R. Smagiel, E. Cholewinska, A. Stepniowska, M. Krauze, K. Ognik

**PS3-015 - Effect of low-oil distillers dried grains with solubles on broilers challenged with *C. perfringens* and *Eimeria* spp.**

B. Singh, E. Chadwick, J. Krehling, K. Macklin

**PS3-016 - Effect of muramidase in combination with different fiber type diets and different anticoccidial programs on broiler performance**

I. Eising, P. Segobola, S. van der Vaart, E. van Eerden

**PS3-017 - Effects of the dietary inclusion of insect meal and live larvae on microbiota modulation in Muscovy duck**

M. Gariglio, I. Ferrocino, I. Biasato, L. Gasco, A. Schiavone

**PS3-018 - Encapsulated branched-chain amino acids: a novel strategy to mitigate the effects of coccidiosis in chickens**

T. Chalvon-Demersay, W. Lambert

**PS3-019 - Evaluation of formic and propionic acid blends supplemented via feed or drinking water for control of colonization of *C. jejuni* in broiler chickens**

G. Wischer, C. Hofacre, M. Jones, R. Berghaus, A. Sokale

**PS3-020 - Evaluation of monoglycerides of short and medium chain fatty acids on performance of broiler chickens in a bacterial enteritis challenge model**

S. Vermaut, A. Holthausen, L. Barnard, J. Millecam, E. Labeeuw, M. De Gussem

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J. Maertens, N. Smeets, A. Luis Gonzalez Sanchez, K. Vermeulen, E. Arévalo Sureda, A. Abdelqader, R. Rodriguez, V. Van Hoeck

**PS3-022 - Impact of a blend of microencapsulated organic acids and botanicals on the microbiota of commercial broilers under clinical necrotic enteritidis**

D. Dittoe, C. Swaggerty, C. Johnson, S. Ricke, A. Piva, E. Grilli

**PS3-023 - Phytogetic feed additive ameliorates carcass traits, cecal pathogen load and blood markers of broilers kept under challenging conditions**

A. Möddel, I. Kröger, S. Haldar, A. Dhara, B. Eckel

**PS3-024 - Positive impact of early-probiotic administration on performance parameters and gut microbiota composition in chickens**

M. Hussain, A. Pérez de Rozas, O. Aizpurua, M. Guivernau, A. Jofré, A. Alberdi, E. Rodríguez-Gallego, M.H. Kogut, J. Tarradas

**PS3-025 - Probiotic supplementation influences performance and apparent ileal digestibility in male and female broilers fed with different protein levels under necrotic enteritis challenge condition**

K. Gharib-Naseri, H. Nguyen, N. Yacoubi, A. Kumar, S. Wu

**PS3-026 - Provision of a synergetic solution of functional amino acids and polyphenols improves performance of broilers facing mild coccidiosis challenge under commercial conditions**

S. Fontaine, C. Manceaux, R. Bouvet, W. Lambert

**PS3-027 - Real-time energy metabolism evaluation of growing broiler chickens under health challenge**

R. de Souza Camargos, R. Riveros Lizana, M. Macari, K. Cardoso Bicego, B. Balbino Leme, N. Kazue Sakomura

**PS3-028 - Reduction of chondronecrosis with osteomyelitis lameness in broilers fed metal amino acid complexes using two challenge models**

A. Alrubaye, R. Burin, M. Rebollo, C. Torres, D. Neves, A. Aljamal, S. Ekesi, A. Hasan, D. Rhoads

**PS3-029 - Screening and Characterization of *Pediococcus acidilactici* LC-9-1 Toward the Selection as a Potential Probiotic for Poultry with Antibacterial and Antioxidative Properties**

C. Li, S. Wang, S. Chen, G. Liu, Y. Beckers, H. Cai

**PS3-030 - Soybean bioactive compounds improve the intestinal and reproductive tract microbiomes of broiler breeders**

M. Gao, Z. Lv, Y. Guo

**PS3-031 - Supplementation with a probiotic mixture in the diet of Guinea fowls (*Numida meleagris*) may introduce beneficial changes in gut microbiota**

L. Galosi, A. Roncarati, P. Robino, A. Bellato, I. Ferrocino, P. Nebbia, L. Biagini, L. Filoni, A.R. Attili, G. Rossi

**PS3-032 - The effect of a postbiotic on the growth performance and gastrointestinal microbiota of broilers infected with subacute necrotic enteritis**

T. Duong, B. Lumpkins, T. Timoharju, T. Rinttilä, S. Llamas-Moya

**PS3-033 - The effect of *Bacillus amyloliquefaciens* CECT 5940 on animal performance and microbiota maturation of broilers fed alternative ingredients**

N. Yacoubi, M. Klunemann, C. Adams, C. Stefanello

**PS3-034 - The effects of amino acid supplementation of low protein diet on the immune responses and short chain fatty acid profile in broiler chickens challenged with *Eimeria* spp.**

G. Liu, A. Ajao, J. Taylor, T. Applegate, R. Selvaraj, E. Ball, I. Kyriazakis, O. Olukosi, W.K. Kim

**PS3-035 - The laying hen's age impact on cholecalciferol (vitamin D3) level of enriched or per se eggs**

G.M. Cornescu, T. Panaite, A. Cismileanu, M.I. Munțiu Rusu



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**PS3-036 - The potential of a pre-starter feeding strategy to ameliorate the adverse impact of health challenges on growth performance in broilers**

R. Franco-Rosselló, C. Alfonso-Carrillo, J. Polo, D. Solà-Oriol, A.I. García-Ruiz

**PS3-037 - Unraveling the probiotic potential of two novel *Bacillus* spp.**

K. Venkatasubramanian, J. Maertens, A. Luis Gonzalez Sanchez, K. Vermeulen, N. Smeets

**PS3-038 - Yeast cell wall improves immune modulation response in aflatoxin challenge broilers**

M. Bonato, M. Ingbergman, B. Beirão, F. Souza

**PS3-039 - Yolk color assessment of eggs obtained under heat stress conditions using different dietary phyto-additives**

G.M. Cornescu, T. Panaite, A. Cismileanu, C. Matache, M.I. Munțiu Rusu

**PS3-040 - *Yucca schidigera* improves performance and lowers oocyst counts in eimeria challenged broilers**

K. Kozłowski, P. Vervenne-Zetteler, P. Konieczka, Ł. Szymanski, A. van Vilsteren

**PS3-041 - Zn acid complex reduces salmonella typhimurium shedding and prevalence by inducing the immune response of Cobb500 broilers**

R. Burin, A. Aljamal, D. Neves, C. Torres, M. Rebollo, S. Carlson

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M. Lemos de Moraes, M. de Souza Vieira, H. Vieira Rios, Y. Katagiri Dalmoro, C. Boudry, R. Sanz Garcia, L. Lahaye, T. Bastos Stefanello, C. Stefanello

**PS4-002 - A bacterial xylanase improves nutrient digestibility and growth performance of pullets**

M. Lemos de Moraes, M. de Souza Vieira, H. Vieira Rios, C. Boudry, R. Sanz Garcia, L. Lahaye, T. Bastos Stefanello, R. Santamaría Brito, D. Purón Hernández

**PS4-003 - Addition of nutritional emulsifiers in decreased nutrient diets**

W. Smink, C. van der Eijk

**PS4-004 - Apparent metabolizable energy and soluble fibre utilisation in broiler chickens fed wheat diets with supplemental carbohydrases and organic acid**

E. Kim, L. Hall, A. Fickler, G. Pasquali, M. Choct

**PS4-005 - Application of methionine source concept in commercial broiler production**

A. Lemme, K. Fenske, H. Westendarp, M. Guhe, E. Rother



**PS4-006 - Bacillus licheniformis and phytase mixture affect growth performance, nutrient digestibility, and cecal microbiome of broiler chickens**

J. Trela, B. Kierończyk, M. Rawski, J. Mazurkiewicz, D. Józefiak

**PS4-007 - Benefit of full matrix application for a novel consensus bacterial 6-phytase variant alone or in combination with xylanase and beta-glucanase**

R. Durán, A. Bello, S. Gilani, B. Hillen, K. Venter, P. Plumstead

**PS4-008 - Corn nutrient composition, energy value, and digestibility of amino acids according to the country of origin and year of harvest: The value of Near-Infrared Reflectance Spectroscopy**

E.O. Oviedo-Rondón, A. Toscan, N.S. Fagundes, J.K. Vidal, J. Barbi, P. Thiery

**PS4-009 - Determination of the standardized ileal digestible calcium requirement of fast-growing male broilers from day 29 to 44 post-hatch**

C. Walk, P. Jenn, C. Chatelle, R. Aureli

**PS4-010 - Dietary supplementation of lysolecithin compared to a combination of lysolecithin, synthetic emulsifier and monoglycerides, on laying performance and egg quality of laying hens**

A. Wealleans, A. Desbruslais, D. Gonzalez-Sanchez

**PS4-011 - Dietary  $\alpha$ -galactosidase and xylanase preparation to improve the nutritional value of corn-soybean meal diets of broiler chickens**

A. Viñado, J. Mascarell, R. Morales, J. Estévez, S. Carné

**PS4-012 - Double Lactobacilli strain-based pro- and post-biotic improved broiler performance and affected minerals metabolism diet-dependently**

S. Jansseune, F. Blanc, F. Calenge, J. van Baal, A. Lammers, A. Mahieu, M. Aoun, M. Pinard van der Laan, W. Hendriks

**PS4-013 - Effect of 1-monoglycerides on performance, ileal mucosa morphometry and footpad dermatitis in broilers**

Y. Shastak, M. Kalyoncu, P. Sacakli, Ö. Sizmaz, M. Pirpanahi, A.G. Bayraktaroglu

**PS4-014 - Effect of a "structured" micro pellet feed during the first five weeks of live of laying hens**

C. Alfonso-Carrillo, R. Akbari Moghaddam Kakhki, R. Franco-Rosselló, A.I. García-Ruiz

**PS4-015 - Effect of a dietary NSPase and grinding method at two nutrient densities on nutrient digestibility & growth performance of Ross 308 broilers**

C. Raybaud, M. Bournazel, T. Condy, C. Le Dain, A. Smith, J. Thoby

**PS4-016 - Effect of a dietary supply of double-buffered sodium butyrate on performance of layers in a context of reduction of energy and protein in the diet**

C. Marecaille, A. Ablanedo, X. Roulleau

**PS4-017 - Effect of chestnut tannins and vitamin E supplementation to linseed oil-enriched diets on performance and meat quality of broiler chickens**

L. Perić, D. Žikić, M. Đukić Stojčić, V. Tomović, J. Leskovec, J. Salobir, V. Rezar

**PS4-018 - Effect of coated calcium butyrate, monobutyryn, and a combination thereof on growth performance and mRNA abundance of genes related to tight junction proteins in broilers**

K. Schuh-von Graevenitz, E. von Heimendahl, L. Barnard, K. Seibt, H. Sadri, H. Sauerwein, G. Dusel

**PS4-019 - Effect of encapsulated lysine on growth performance and carcass quality in broilers**

E. Gonzalo, R. Bouvet, W. Lambert, T. Chalvon-Demersay

**PS4-020 - Effect of low-level calcium and phosphorus diets supplemented with calcium pidolate on broiler body weight and rate of culled birds**

B. Iglesias, M.V. Charriere, V. Fain Binda, J. Melo

**PS4-021 - Effect of lysophospholipids and xylanase supplementation on growth performance in turkeys**

I. Somers, A. Wealleans, D. Scholey, A. Debruslais, D. Gonzalez Sanchez, E. Burton

**PS4-022 - Effect of oil quality and supplemental vitamin E source on the performance and vitamin E retention in the liver and breast meat of 21-day-old broiler chickens**

S. Adedokun, R. Adefioye, M. Lindemann, M. Ford, A. Pescatore, M. Azain

**PS4-023 - Effect of phytase and limestone particle size on performance, eggshell quality, bone mineralization and mineral digestibility in laying hens**

F. Hervo, M. Létourneau-Montminy, B. Méda, M. Duclos, A. Narcy

**PS4-024 - Effect of wheat, maize, rice or pea in combination with rapeseed meal or soybean concentrate and sunflower meal on broiler chickens' growth**

M. Mireaux, A. Bertin, C. Regnier, K. Bebin

**PS4-025 - Effects of 2 limestone solubilities and 3 calcium levels in diets with a phytase on performance, mineral digestibility, and tibia ash of broilers**

C. Kwakernaak, Y. Dersjant-Li, V. Lagos, L. Marchal, A. bello

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S. Chee, A. Legawa, A. Rahajeng, V. Maria, L. Pineda, K. Sekarlangit, I. Yu, S. van Kuijk

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S. Ladirat, A. Elolimy, M. Shourrap, M. Madkour

**PS4-028 - Effects of dietary microalgae (*Chlorella vulgaris* and *Spirulina platensis*) on eggs' carotenoid content and yolk color intensity**

T.D. Panaite, M.G. Cornescu, N.C. Predescu, M. Sărăcilă, A.E. Untea, I. Vărzaru

**PS4-029 - Effects of dietary sugar beet pulp incorporation along with AMEn reduction in broilers at two levels of crude protein content**

P. Sakkas, K. Bebin, F. Richard

**PS4-030 - Effects of limestone origin and a new phytase on performance, nutrient digestibility and tibia ash of conventional and slow growing broiler breeds**

C. Kwakernaak, C. Walk, V. Lagos, L. Levrouw, A. Smith

**PS4-031 - Effects of replacing inorganic trace minerals with glycines on production parameters of older broiler breeder hens during a heat stress period**

S. Rothstein, S. Mashahiri, M.A.K. Torshizi, F. Shariatmadari, R.V. Torshizi, H. Ahmadi

**PS4-032 - Efficacy of a biosynthetic bacterial 6-phytase on performance, bone mineralization and precaecal digestibility of phosphorus in broilers fed normal- or high-phytate diets**

M. Jlali, M. Ceccantini, B. Yavuz, S. Ozbek, E. Devillard

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M. Jlali, C. Hincelin, B. Yavuz, S. Ozbek, M. Ceccantini, A. Preynat, E. Devillard

**PS4-034 - Efficacy of a total substitution of synthetic choline chloride by a natural polyherbal-based product in broilers feeds**

C. Sol, M. Dewez, J. González

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S. Bypanahalli, S. Mysore, G. Bekkere, H. Gangavadi, B. Ganguly

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C. de Wildt, O. Lemâle

**PS4-037 - Evaluation of pellet microstructure particle size as consequence of secondary grinding on pellet quality and gizzard development in broilers**

M.A. Ebbing, N. Yacoubi, M. Gierus

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N. Such, L. Pál, Á. Bartos, L. Wágner, M.A. Rawash, Á. Mazólaki, P. Strifler, K.G. Tewelde, K. Duplecz

**PS4-039 - Feed cost optimization and gut health improvement by dietary incorporation of multi-enzyme product in commercial broilers**

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